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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/581,044	06/08/2000	TAEKYU LEE	TSRI609.1	2188

7590 08/01/2003

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EXAMINER
RUSSEL, JEFFREY E

ART UNIT	PAPER NUMBER
1654	21

DATE MAILED: 08/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/581,044	LEE ET AL.	
	Examiner	Art Unit	
	Jeffrey E. Russel	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3,6-9,11 and 16-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *6-9,16,17 and 19-22* is/are allowed.

6)☒ Claim(s) *3 and 11* is/are rejected.

7)☒ Claim(s) *18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 June 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

1. A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on January 16, 2003 has been entered. (The amendment attached to the Request for Continued Examination duplicates the amendments contained in the amendment after final rejection filed January 16, 2003.)

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being obvious over Handa et al (U.S. Patent No. 5,157,041). Handa et al at Example 85 teach a compound which has the same structure as the compound recited in Applicant's claim 3, except that Handa et al's compound comprises a cysteine residue rather than a valine residue. It would have been obvious to one of ordinary skill in the art at the time Applicants' invention was made to form the compound of Handa et al with a valine residue rather than a cysteine residue, because Handa et al disclose an alkyl sidechain to also be a preferred substituent at the same position as the asparagine sidechain (see column 5, lines 14-16), because valine is also a commonly available and well-known amino acid, and because the resulting compound has only the expected protease inhibitory activity. Handa et al's compound of Example 85 with its 3(S)-2(R) configuration has the same stereochemistry required by Applicants' claim 3. Handa et al do not teach the compound of Example 85 in stereochemically pure form, but in general disclose producing optically pure

forms (see, e.g., column 4, lines 60-65, and column 8, lines 49-53). It would have been obvious to one of ordinary skill in the art at the time Applicants' invention was made to form the stereochemically pure compound of Handa et al as discussed above because Handa et al disclose the formation of optically pure forms, because it is desirable in the pharmaceutical arts to produce optically pure forms in order to avoid unwanted side effects from the other stereochemical forms and in order to increase the specific activity of the desired stereochemical forms, and because it is prima facie obvious to purify a known product. See MPEP 2144.04(VII).

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being obvious over the Slee et al article (J. Am. Chem. Soc. Vol. 117, pages 11867-11878). The Slee et al article teaches compound 8 (see page 11870, Figure 9), which has the same structure and stereochemistry as the compound of instant claim 3 in which R_1 is carbobenzyloxy and R_2 is -H(t-Butyl). The Slee et al article does not teach the compound in stereochemically pure form. It would have been obvious to one of ordinary skill in the art at the time Applicants' invention was made to form the stereochemically pure compound of the Slee et al article because it is desirable in the pharmaceutical arts to produce optically pure forms in order to avoid unwanted side effects from the other stereochemical forms and in order to increase the specific activity of the desired stereochemical forms, and because it is prima facie obvious to purify a known product. See MPEP 2144.04(VII).

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being obvious over Jadhav et al (U.S. Patent No. 5,294,720). Jadhav et al teach compounds of Examples 91 and 93 (see columns 83-86) which correspond to Applicants' compounds of claim 2 and 10 in which R_1 is carbobenzoxy-

glycine-valine- or carbobenzoxy-leucine-valine, and R_2 is CH_2-Phenyl. Jadhav et al's compounds are deemed inherently to have the same stereochemistry as Applicants' claimed compounds because of their similarity in activity, i.e. they all inhibit HIV proteases (see, e.g., column 2, lines 8-30 of Jadhav et al). Alternatively, to the extent that Jadhav et al's syntheses may produce stereochemical mixtures, such mixtures anticipate Applicants' claimed compounds because Applicants' claims do not require the compounds to be stereochemically pure. Jadhav et al's compounds differ from the compound of claim 11 in that Jadhav et al's compounds have Gly or Leu rather than Ala at the first and last positions of their compounds. Jadhav et al teach in general that Gly, Leu, and Ala can be used in these sections of the compounds, designated by the reference as R^2, R^{2A}, R^9, and R^{9A} (see column 3, lines 30-46). It would have been obvious to one of ordinary skill in the art at the time Applicants' invention was made to form compounds according to Jadhav et al which have the structure of compounds of Examples 91 and 93 except that Ala rather than Gly or Leu is present in the first and last positions of each compound, because such compounds are generically embraced by Jadhav et al, because the substitution of alanine for glycine or leucine is a conservative substitution of amino acids and a homologous substitution of amino acid sidechains which would not have been expected to materially affect the activity of the compounds, and because the resultant compounds have only the HIV protease inhibitory activity which would have been expected in view of Jadhav et al.

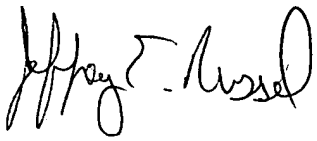
6. It is noted that the amendment to claim 3 filed January 16, 2003 and repeated on July 14, 2003 expands the definition of R_1 with respect to the finally rejected version of the claim, and the amendment to claim 11 removes the claim limitation requiring a stereochemically pure compound. These claims are now rejected over prior art that had been applied against earlier

broader versions of these claims. The examiner maintains his position for the reasons set forth during the earlier prosecution of this application.

7. Claims 6-9, 16, 17, and 19-22 are allowed. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey E. Russel at telephone number (703) 308-3975. The examiner can normally be reached on Monday-Thursday from 8:30 A.M. to 6:00 P.M. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Brenda Brumback can be reached at (703) 306-3220. The fax number for Art Unit 1654 for formal communications is (703) 305-3014; for informal communications such as proposed amendments, the fax number (703) 746-5175 can be used. The telephone number for the Technology Center 1 receptionist is (703) 308-0196.



Jeffrey E. Russel

Primary Patent Examiner

Art Unit 1654

JRussel

July 31, 2003